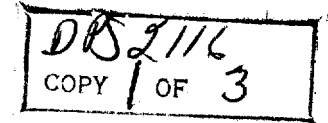


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Dear Dan:

This is a proposal for a program to provide continued engineering service on System 1 for the remainder of 1958. This engineering service is required to take care of equipment modifications which are the result of a continued program of performance improvements. In addition, this engineering service will include the investigation of problems reported from the field and the development of modifications to meet new customer requirements.

The proposed equipment modifications fall into two categories. Those which are needed urgently in order to continue satisfactory System performance, and those which are recommended to improve System performance. Sid W. had discussed with you the following two urgently needed modifications:

Bow Tie Antenna Interference

The Bow Tie antenna bracket interferes mechanically with the System 3 structure. We have requested the vehicle manufacturer to redesign this bracket and propose to have it installed in the field as a modification kit. A service bulletin will also be prepared for this modification. This kit and bulletin can be ready for delivery within three weeks after receipt of authority to proceed.

Radio Interference

The System 1 power supply radiation interferes with the AN/ARN-6 Radio Compass. This interference is so severe that the operational command has suggested that they may request the complete shutting down of System 1 until this interference is removed. We propose to devise improved shielding and add an electrical filter. These improvements will form part of a field modification kit to be accompanied by a service bulletin. This kit and bulletin can be delivered within six weeks after receipt of authority to proceed.

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In addition to the critically needed equipment modification spoken of in the prior paragraphs, the following equipment modifications would be desirable. Each of these modifications could be incorporated into field modification kits with accompanying service bulletins within about eight weeks after receipt of authority to proceed:

B -Unit Recorder Tape Drag

The performance of the B -Unit Recorder can be improved by modifying the tape transition. This change will reduce the failure rate caused by the excess drag on tape movement.

Interaction Between C5 Unit and B -Unit Recorder

Another problem of interaction exists between the transistorized C5 Unit and the B -Unit Recorder. The low output impedance of the C5 Unit causes a reduction in the bias signal which results in reduced sensitivity in recorded signals. This interaction can be eliminated by proper filtering, thus improving overall performance.

Interaction Between C5 Unit and Rambo Unit

The C5 Unit must be modified to operate with the Rambo Unit (TWT) without degradation in performance. A means for shorting out the output of the last stage of the video amplifier is required when operating with the Rambo Unit. In addition, these units will be tested by us before they are shipped for use in the field.

B -Unit Connector

The connector P702 going to plug J702 of the B -Unit Recorder has vibrated loose causing an in-flight failure of System 1. A modification is required which provides a locking-type connector for replacement of the connector now used in the B -Unit. This modification can be achieved without rewiring the connector.

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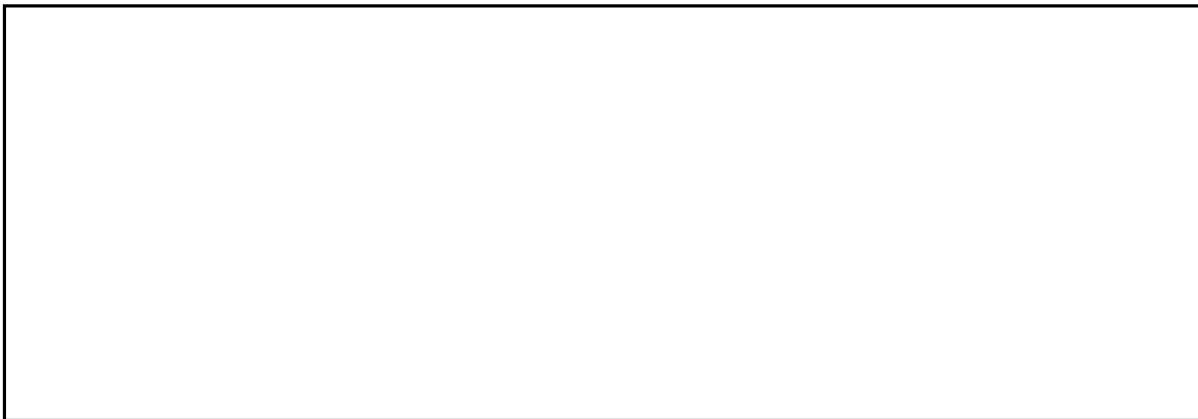
25 June 1958

In addition to these equipment modifications, there are a number of problems which require some investigation before specific modifications can be recommended. These problems include:

- a. The drift in 1 kc crystal frequency occurring over long periods of time apparently due to the crystal units being over-driven.
- b. The apparent positive feedback in the tube version of the information amplifier (C-3 Unit).
- c. Noise spikes produced by the power supply require investigation to determine if these spikes can be further reduced.

These problems will be investigated during this program and where improved performance will result, modification kits and service bulletins will be issued.

We propose also to conduct investigations of new problems reported from the field, and the incorporation of any modifications required to meet new performance requirements requested by the customer.



Sincerely,


Dean

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Enclosures:

Copies 1-3 of CMCC Document No. 1132X5.221

cc: J.L.W. - AGO

Copy 4 of CMCC Document No. 1132X5.221

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Next 1 Page(s) In Document Exempt

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1		<i>EMJ</i>	<i>11 Aug</i>
2			
3			
4			
5	<i>CMCL 151X5.1160</i>		
6			
ACTION		DIRECT REPLY	PREPARE REPLY
<input checked="" type="checkbox"/>	APPROVAL	DISPATCH	RECOMMENDATION
<input checked="" type="checkbox"/>	COMMENT	FILE	RETURN
	CONCURRENCE	INFORMATION	SIGNATURE
Remarks: <i>Cannot agree with the following proposals for Chalice:</i> <i>A. BowTie Antenna Interference - we do not use a system like in the nose anymore but rather in the cheek area.</i> <i>C. Radio Interference - Have not had this complaint from Operations altho it could be present in FOT aircraft with use of old 28 volt power supply. I should contact field on this one.</i> <i>C. B-Vint Recorder Tape Drag - We have solved this problem</i>			
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D. Interaction Between C-5 unit &
B Recorder - We do not
use the C-5 unit

E. Interaction Between C-5 unit
and Rambo Unit - We do
not use the C-5 unit

Will go along with following
on basis they represent worthwhile
if not vital objectives:

a. B-Unit Connector

b. Investigation of the

① Drift in 1K C crystal
frequency

② Apparent positive
feedback in C-3 unit

③ Noise spikes produced
by power supply